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CAN PAY FOR SUCCESS SCALE APPRENTICESHIPS IN THE U.S.?

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APPRENTICESHIPS FOR AMERICA

In this chapter, we propose an examination of pay for success proposals for expanded funding of U.S. apprenticeships. After a brief review of the apprenticeship model, we review the U.S. context for apprenticeship, including the relatively low levels of public funding for apprenticeship when compared with other countries where apprenticeship is much more prevalent. We then look at apprenticeship funding systems in England, France, and Australia for insights into the design of an effective public investment effort. We also look at U.S. experimentation with pay for success models, with a special focus on California's Apprenticeship Innovation Fund. Finally, we conclude with a look at prospects for a national pay-for-success funding model for apprenticeships, including considerations for design and implementation in this unique context.

INTRODUCTION

Apprenticeship in the United States is having a moment. For years a niche workforce development strategy almost exclusively limited to the construction trades, apprenticeship over the last 10 years has seen both growth and diversification. Apprenticeships have sprouted up in new occupations, engaged a range of institutions from business trade groups to community colleges, and captured the discourse of policymakers looking for alternatives to an increasingly unpopular

and unaffordable "college for all" prescription. Public perceptions of apprenticeship are also changing, with employers, workers, students, and job seekers expressing more interest in apprenticeship opportunities.

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Apprenticeship is getting a second look for a good reason. It is a powerful work-based, earn-and-learn training model, and the numbers prove apprenticeships work: On average, apprentices earn around 50% more a year after completing the apprenticeship compared to the year before.[1] Graduates of registered apprenticeship programs earn an estimated $301,533 more than comparable peers across a career, including wages and benefits.[2] Businesses benefit too: Canadian research suggests that businesses benefit an average of $1.47 returned for every dollar invested through increased productivity.[3] The majority of Swiss businesses report a net benefit from training apprentices.[4] In England, employers receive a net benefit of £2,496 during training.[5]

As a real job with benefits and no costs to the learner, apprenticeships reduce barriers to access for underserved populations. As a training program designed by and for employers, apprenticeships bridge the gap between education and the workforce, and ensure individuals receive training in the skills employers need. And apprenticeship seems to be purpose-built to respond to many emerging dynamics in contemporary labor markets. See chapter 4 of this volume, "AI and the Return of Apprenticeships: Using The Hire-Train-Deploy Model: Rethinking Entry-Level Workforce Development in the Age of AI."

1 Douglas Walton, Karen N. Gardiner, and Burt Barnow, "Expanding Apprenticeship to New Sectors and Populations: The Experiences and Outcomes of Apprentices in the American Apprenticeship Initiative," prepared for the U.S. Department of Labor, Employment and Training Administration, Abt Associates, August 2022, https://www.dol.gov/sites/dolgov/files/ETA/publications/ETAOP2022-35_AAI_Outcomes_Final_Report_508_9-2022.pdf.

2 Debbie Reed et al., "An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States: Final Report," prepared for the U.S. Department of Labor, Employment and Training Administration, Mathematica Policy Research, July 25, 2012, https://mathematica.org/publications/an-effectiveness-assessment-and-costbenefit-analysis-of-registered-apprenticeship-in-10-states.

3 Canadian Apprenticeship Forum – Forum canadien sur l'apprentissage (CAF-FCA), "It Pays to Hire an Apprentice: Calculating the Return on Training Investment for Skilled Trades Employers in Canada," June 2009, https://www.nsapprenticeship.ca/sites/default/files/files/CAF-pays.pdf.

4 Alexander Gehret, Manuel Aepli, Andreas Kuhn, and Jürg Schweri, "Lohnt sich die Lehrlingsausbildung für die Betriebe? Resultate der vierten Kosten-Nutzen-Erhebung," Eidgenössisches Hochschulinstitut für Berufsbildung, November 2019, https://www.ehb.swiss/sites/default/files/obs_ehb_bericht_kosten-nutzen.pdf.

5 St Martin's Group, "The Real Costs and Benefits of Apprenticeships," September 2021, https://stmartinsgroup.org/wp-content/uploads/2021/09/The-St-Martins-Group_The-Real-Costs-and-Benefits-ofApprenticeships.pdf.

/ FIGURE 1 /
COMPARISON OF INTERNATIONAL APPRENTICESHIP LEVELS

Country	Active Apprentices	Labor Force	Apprentices % of labor force
United States	560,000[1]	168,550,000[2]	0.33%
Scotland	39,000[3]	2,656,000[4]	1.47%
Austria*	108,000[5]	4,797,000[6]	2.27%
Canada*	459,000[7]	21,164,000[8]	2.11%
Australia	352,000[9]	14,522,000[10]	2.42%
England	767,000[11]	28,913,000[12]	2.65%
Germany*	1,217,000[13]	45,883,000[14]	2.65%
France	1,036,000[15]	31,647,000[16]	3.27%
Switzerland*	210,000[17]	5,355,000[18]	3.92%

Note: Asterisk (*) indicates data is from 2023; all other data is from 2024.

[1] https://www.apprenticeship.gov/data-and-statistics/apprentices-by-state-dashboard

[2] https://www.bls.gov/webapps/legacy/cpsatab1.htm

[3] https://www.skillsdevelopmentscotland.co.uk/media/1hiip1pm/modern-apprenticeship-statistics-quarter-4-2023-24.pdf

[4] https://www.gov.scot/publications/scotlands-labour-market-insights-april-2024/pages/people-in-work/

[5] https://www.wko.at/statistik/jahrbuch/2024-c16.pdf

[6] https://tradingeconomics.com/austria/labor-force-total-wb-data.html#:~:text=Labor%20force%2C%20total%20in%20Austria,compiled%20from%20officially%20recognized%20sources.

[7] https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710021901

[8] https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410028703&pickMembers%5B0%5D=3.1&pickMembers%5B1%5D=4.1&cubeTimeFrame.startMonth=12&cubeTimeFrame.startYear=2023&referencePeriods=20231201%2C20231201

[9] https://www.ncver.edu.au/research-and-statistics/data/databuilder#

[10] https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release

[11] https://explore-education-statistics.service.gov.uk/find-statistics/apprenticeships/2024-25

[12] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/headlinelabourforcesurveyindicatorsforallregionshi00

[13] https://www-genesis.destatis.de/datenbank/online/statistic/21211/table/21211-0001

[14] https://www.destatis.de/EN/Themes/Economy/Short-Term-Indicators/Labour-Market/karb811_x13a.html

[15] https://poem.travail-emploi.gouv.fr/synthese/contrats-d-apprentissage

[16] https://tradingeconomics.com/france/labor-force-total-wb-data.html

[17] https://www.bfs.admin.ch/bfs/en/home/statistics/education-science/pupils-students/upper-secondary/vocational-training-apprenticeships.html

[18] https://www.bfs.admin.ch/bfs/en/home/statistics/work-income/employment-working-hours/economically-active-population/labour-market-status.html

Yet the U.S. lags behind the levels of apprenticeship seen in other countries. Even ignoring the apprenticeship powerhouses of Germany and Switzerland, apprentices are a far lower share of the U.S. labor force relative to many developed economies, including several where national policy has only recently embraced the practice. While the raw number of apprentices isn't dramatically different country to country, the difference is dramatic in comparison to the size of their labor force. The U.S. has just under half as many apprentices as a proportion of the labor force as in Scotland, the second-lowest performer.

The countries listed in Figure 1 invest far more in their apprenticeship efforts. On an adjusted per capita level, France spends almost 200 times more .more than the United States. England and Canada spend spend 60 and 20 times more, respectively, and Australia spends 250 times more. Making a deeper investment in apprenticeship is central to growing apprenticeship in the United States. But what form should this investment take?

In this chapter, we explore the application of a pay for success investment model to apprenticeship. We'll look at how such models have been implemented internationally and (to a much more limited degree) in the states. We'll outline a proposal for a pay for success model. And we'll describe the impact such a model could have on apprenticeship and talent development practices in the United States.

APPRENTICESHIP IN THE UNITED STATES: AN OVERVIEW

Apprenticeship is hardly new; its modern practice dates back to 1937 when the U.S. passed the National Apprenticeship Act, which forms the basis of the system we use today. Informal apprenticeship predates the founding of the country. Famously, George Washington (surveyor), Paul Revere (silversmith), and Benjamin Franklin (printer) were apprentices.

Apprenticeship is understood to embody four elements. First, it is a job expected to continue beyond the term of the apprenticeship.

Second, it combines on-the-job and classroom or other instruction to develop specified skills and abilities to make an apprentice fully productive in their role. Third, it involves a mentorship, ensuring that apprentices have workplace-based coaching. And finally, it entails graduated wages where apprentices start at a rate less than their fully productive peers and work their way up to a market wage for the occupation.

A public funding stream directly tied to hiring and retention of apprentices would be a game changer in the United States. In addition to offering substantially more funding, such a model offers the prospect of reliable and stable funding to attract investment in apprenticeship practices and the infrastructure of organizations and arrangements to scale apprenticeship.

While once largely limited to the construction trades, other occupations have also seen significant growth. A growing one-third of all apprentices are now in nontrades occupations that include health care, education, business services, engineering, technology, manufacturing, and other sectors.

Official recognition of an apprenticeship program comes in the form of registration, which can happen federally or through a network of state apprenticeship offices. Apprentices who complete the term of a registered apprenticeship receive a credential from the U.S. Department of Labor.

The United States offers many varieties of apprenticeship. While individual employers may register their own apprenticeship program limited to their employees, most apprentices work under multiemployer apprenticeships that bring together employers for a commonly agreed set of competencies and training plans. These group efforts can involve a union that jointly sponsors the apprenticeship but can also be sponsored by a range of other institutions, including trade groups, community colleges, nonprofit organizations, staffing agencies, and others. According to data from the U.S. Department of Labor, 45% of currently active apprentices are union members. Historically, apprenticeships have been time based with stated expectations for hours of classroom and work, but many apprenticeship programs now use competency models. Apprenticeship is available to anyone age 16 and up, and some programs specialize in apprenticeship programs serving younger people. These programs may be school based or operate outside of schools.

U.S. CONTEXT AND FUNDING ENVIRONMENT

Apprenticeships are underutilized in the U.S. for three main reasons: A lack of awareness and understanding, a complex and underscaled administrative system, and low levels of funding and incentivization. Until recently, federal appropriations for apprenticeship were limited to support for the registration function. Apprenticeship had almost no public funding. Starting with the Obama administration and continuing

through the Trump and Biden administrations, federal outlays have grown. Today, about $300 million is annually appropriated for the support of apprenticeship. These funds are distributed in two ways: Funds are down-streamed to states in support of state systems and projects, and funds are awarded directly through competitive grants to apprenticeship programs and organizations working to expand apprenticeship.

As described below, state appropriations for apprenticeships have likewise historically been limited but are growing modestly. States have made funding available to community colleges and secondary schools for work on apprenticeship and youth apprenticeship. Many states have tax credit incentives for employers hiring apprentices. And a few states are appropriating small amounts to operate grant programs to support apprenticeship efforts.

Public support for traditional college postsecondary pathways dwarfs these amounts, with college pathways receiving $1,000 in federal and state funding for every dollar spent on apprenticeship.[6] Traditional college students receive $50 for every dollar benefiting an apprentice.[7]

Importantly, one other source of public support comes in the form of industrial policy. Apprenticeship's growth in the construction sector is in no small part the result of the federal Davis-Bacon Act of 1931, which sets forth expectations for wages and working conditions for construction projects using federal funding. Davis-Bacon has had the impact of creating industry norms for much of the construction industry and includes provisions for paying less than prevailing wages to apprentices. More recently, the Inflation Reduction Act and the CHIPS and Science Act advanced a range of workforce development objectives through direct funding as well as through tax incentives and funding requirements for industry beneficiaries, including the use of apprenticeship in projects supported through these efforts.

Notwithstanding the gains of the last decade, a myriad of problems — the small amounts involved, the patchwork nature of U.S. support for apprenticeship, the limited duration of most funding, and idiosyncratic distribution mechanisms — separate the U.S. funding mechanisms from those in countries that have more substantially grown their share of apprenticeships in the labor force. As a result, the U.S. lacks a vibrant ecosystem of organizations acting as solutions providers and enablers of apprenticeship, a critical condition to scaling up the practice.

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6 Urban Institute, "Higher Education Expenditures," n.d., https://www.urban.org/policy-centers/cross-center-initiatives/state-and-local-finance-initiative/state-and-local-backgrounders/higher-education-expenditures.

7 Ryan Craig, *Apprentice Nation: How the "Earn and Learn" Alternative to Higher Education Will Create a Stronger and Fairer America* (Dallas, TX: BenBella Books, 2023).

A public funding stream directly tied to hiring and retention of apprentices would be a game changer in the United States. In addition to offering substantially more funding, such a model offers the prospect of reliable and stable funding to attract investment in apprenticeship practices and the infrastructure of organizations and arrangements to scale apprenticeship. Based on the experience of other countries, we estimate that such a funding approach would lead to an eightfold increase in apprenticeship.

PAY FOR SUCCESS AND APPRENTICESHIP

Applying pay-for-success models to apprenticeship can be complicated by nomenclature, definitions of success, and the practicalities of these innovative funding arrangements.

In a recent report by the U.S. Department of Labor on pay for success and apprenticeship, the department noted the many forms pay for success (PFS) has taken:

> *In one definition, PFS is seen as a performance-based contracting tool, where payments to service providers hinge on meeting predetermined benchmarks. Another definition focuses on public-private collaboration, with private sector investors taking on financial risks that governments traditionally hold. In yet another view, PFS emphasizes the social impact bond (SIB) model, which involves direct investments by private or nonprofit entities in social programs, with repayment contingent on third party-verified success metrics.*[8]

In the end, the department found none of these definitions satisfactory or workable and instead focused on an outcomes-based contracting approach to create financial incentives for increasing apprenticeships.

Defining success. The ultimate goal of an apprenticeship is, for the employer, the development of productive employees and, for the apprentice, securing a career in a high-paying occupation. These are critical aspects of the social value of apprenticeship: the enhanced lifetime earnings of the apprentice as their wages rise to the market-rate salary for a fully skilled employee in their occupation, the economic development impact of a productive employee, and all the social goods that stem from these outcomes. However, for the purposes of an incentive funding model, the timing and measurement of such long-term outcomes pose practical challenges. Instead, most public funding models that encourage apprenticeship tie payments to intermediary (but no less valuable) milestones achieved during the term of the apprenticeship.

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8 U.S. Department of Labor Employment and Training Administration, "ETA Report: Pay-for-Success Feasibility Study for Registered Apprenticeships — October 23, 2024," November 15, 2024, https://apprenticeshipsforamerica.org/resources/advocacy-resources/24/eta-report-pay-for-success-feasibility-study-for-registered-apprenticeships-october-23-2024.

Apprenticeship requires a different form of incentive funding design because it starts where most workforce programs end: with a job. For many workforce development pay-for-success models, placement in a job comes after weeks, months, or even years of education, training, and other workplace preparation activities. Job placement constitutes one of the most important success events that might generate an outcomes-based payment. On the other hand, apprenticeships do not begin until the worker is hired. Paying for a result that occurs on day 1 may seem counterintuitive, but herein lies the strength of the apprenticeship model: It front-loads many of the success-creating activities of recruiting and organizing employers and subsequently ensuring a structure for training and employment success (which involves real costs).

Funding model design. Finally, even once the success events are fully defined, key details must be addressed if a pay- for-success program is to be successful in the apprenticeship context. Seemingly simple issues such as who receives the payment are nontrivial in an apprenticeship system where the sponsor of record, the apprentice's employer, and the organization that incurred the costs of planning and launching the apprenticeship may each be a different entity.

Scaling apprenticeships in the U.S. is no longer a controversial goal. Few have a quarrel with widening routes to rewarding careers by emphasizing learning by doing, earning while learning, and attaining high skills while contributing to production.

For the purposes of this chapter, we define apprenticeship pay-for-success as a public funding mechanism that pays a *fixed rate per apprentice* upon the satisfaction of one or more *milestones*, such as hiring at the start of an apprenticeship, employer retention of an apprentice for a defined time period, and the worker's completion of the apprenticeship and receipt of enhanced wages. Ideally, such funding would be available to all-comers and would thereby catalyze a competitive ecosystem. But limits on funding may mean that the funding arrangements are restricted to particular populations, occupations, or organizations.

LESSONS FROM INTERNATIONAL FUNDING SYSTEMS

Internationally, governments that have funded apprenticeships using pay-for-success models have grown their countries' programs rapidly. In this section, we provide a brief description of international approaches to funding apprenticeships as well as an analysis of the key features that provide a model for scaling U.S. apprenticeships.

ENGLAND: INVESTMENT FUNDED BY A DEDICATED TAX LEVY

English apprenticeships have a long history: The first national regulations were introduced in the 1563 Statute of Artificers.[9] Apprenticeships waxed and waned through the 20th century before rapid growth in the early 2000s. Apprenticeships grew from 65,000 starts in the 1996–97 academic year, to a high of around 500,000 starts a year in the mid-2010s, before falling more recently to 340,000 starts in the latest academic year.[10]

Alongside introducing national standards, improving quality, and a focused media campaign, public funding was a major driver of this exponential increase. During the period of expansion, funding was paid directly to training providers, through sustained annual funding formulas based on the number of apprentices under contract. Funding contracts were activated when an apprentice started. Employers paid wages and on-the-job training costs, with the government meeting all other costs, determining the fixed rate per apprentice by convening groups of employers.

In 2017 the Apprenticeship Levy was introduced: U.K. employers with an annual payroll of £3m+ ($3.8m) pay the levy at 0.5% of total payroll, which then funds the costs of apprenticeships for both levy payers and nonlevy payers. The levy was forecast to raise £3.9 billion ($4.9 billion)[11] in 2023–24.[12] Training providers receive monthly funding allocations based on the number of active apprentices. Employers also receive tax rebates for hiring young apprentices.

Evidence indicates this investment has produced a significant social return. The Chartered Management Institute found that apprentices qualified in 2019 are projected to add £7 billion to the English economy by the end of 2029, based on an initial training investment of £2 billion — a 300% return on investment.[13]

FRANCE: INTERMEDIARY LEADERSHIP

As in England, apprenticeships were a popular route for French workers in the early 20th century but stagnated in the postwar period, with around 200,000 new apprentices starting each year.

9 Andrew Chrucky, "Statute of Artificers, 1563," Digital Text International, https://www.ditext.com/morris/1563.html.

10 U.K. Department for Education, "Academic Year 2023/24: Apprenticeships," accredited official statistics, November 28, 2024, https://explore-education-statistics.service.gov.uk/find-statistics/apprenticeships.

11 Based on average exchange rates in January 2025.

12 Office for Budget Responsibility, "Economic and Fiscal Outlook," CP 1027, March 2024, https://obr.uk/efo/economic-and-fiscal-outlook-march-2024/#annex-a.

13 Chartered Management Institute, "Apprentices Add £7 Billion to Economy Within a Decade," press release, November 8, 2022, https://www.managers.org.uk/about-cmi/media-centre/press-releases/apprentices-add-7-billion-to-economy-within-a-decade%EF%BF%BC/.

In 2018, facing high youth unemployment, France introduced dramatic reforms: liberalizing the creation of Centres de Formation d'Apprentice (CFAs), which provide off-the-job training; increasing the apprentice age limit to 30; introducing a new quality assurance certification (Qualiopi); simplifying funding incentives for

employers; simplifying contractual arrangements to align with conventional employment contracts; increasing apprenticeship wages; and introducing a new national government agency, France Compétences, to regulate and fund the system.[14]

The 2018 reforms introduced a system of "contract cost" financing for CFAs, where professional branches set the levels of cost associated with training — *the niveau de pris en charge* — with oversight from France Compétences to ensure convergence.[15] These levels are based on the actual costs of training, from data reported by CFAs. Revenue from the apprenticeship tax, 0.68% of payroll for all employees, is used to meet these costs.[16] Funding is paid when apprentices are hired and the apprenticeship begins.

France has a range of incentives for employers. Apprentice wages are exempt from social security taxes. During the COVID-19 pandemic, France introduced payments of €5,000 ($5,370) for apprentices under 18, and €8,000 ($8,590) for adult apprentices, for the first year of apprenticeship contracts.[17] Beginning in 2023, a €6,000 ($6,340) subsidy was made available, as part of a new goal of reaching 1 million annual apprenticeship starts by 2027, up from current levels of 800,000 starts each year and more than double the annual number of new apprentices in 2018.[18,19]

Both the 2018 reforms and the pandemic-related subsidies have caused a significant scaling up in French apprenticeships. The number of apprenticeship contracts has grown from 494,000 in 2018 to 799,000 in

14 Frédéric Turlan, "France: Government Unveils Plans for Reform of Apprenticeship System," Eurofound, March 22, 2018, https://www.eurofound.europa.eu/en/resources/article/2018/france-government-unveils-plans-reform-apprenticeship-system.

15 France Compétences, "Niveaux de prise en charge des contrats d'apprentissage," April 2, 2024, https://www.francecompetences.fr/reguler-le-marche/niveaux-de-prise-en-charge-des-contrats-dapprentissage; France Compétences, "Réguler la formation professionnelle et l'apprentissage," n.d., https://www.francecompetences.fr/reguler-le-marche/.

16 France, "Labor Code, Article R6123-25," July 10, 2024, https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000049915629.

17 Bruno Coquet, "Apprentissage: un bilan des années folles," policy brief, OFCE, Sciences Po, June 14, 2023, https://www.ofce.sciences-po.fr/pdf/pbrief/2023/OFCEpbrief117.pdf.

18 Entreprendre.service-public.fr, "Hiring Aids for an Apprenticeship Contract," January 1, 2023, https://entreprendre.service-public.fr/vosdroits/F23556?lang=en.

19 AFP, "The Government Maintains Significant Aid to Reach One Million Apprentices," Batinfo, December 2, 2022, https://batinfo.com/en/actuality/the-government-maintains-significant-aid-to-reach-one-million-apprentices_22718.

2021.[20] At this point, the French youth employment rate hit its lowest level for more than 30 years, at 16.4%. Financial incentives played a major role in this expansion, with one analysis concluding that the 2018 reforms accounted for 15% of the increase and monetary incentives the remaining 85%.[21]

While it is difficult to account for the complete costs of French apprenticeships, an estimated €20 billion ($21.5 billion) was spent in 2022, more than 1% of government spending.[22] Of this amount, training costs were €7.6 billion ($8.2 billion), with employer subsidies at €10.6 billion ($11.4 billion).

AUSTRALIA: EMPLOYER ENGAGEMENT

Historically, funding for apprenticeships in Australia was primarily the responsibility of employers, with limited government involvement. Government funding increased substantially with the National Apprenticeship Assistance Scheme in 1973, providing financial support to apprentices and employers.

Today, the Australian apprenticeship system is characterized by a mix of government funding and employer contributions. The Australian government provides significant financial support for apprenticeships, covering a portion of training costs and offering various incentives to employers. Public funding meets 100% of the training costs for apprentices under the age of 25, with reduced rates for older apprentices. Employers are responsible for paying apprentice wages.

More recently, the Australian Apprenticeships Incentive System was introduced. With a funding allocation of AU$2.994 billion ($1.9 billion USD) from the period 2022–23 to 2026–27, the Incentive System had already disbursed AU$318.6 million ($200 million USD) in financial support to employers, apprentices, and training organizations by the end of 2023.[23] The Australian government spent a total of AU$4.6 billion ($2.9 billion USD), combining federal and state spending, on apprenticeships in 2023.[24]

Australia's apprenticeship funding system has evolved significantly over the past century, with major reforms aimed at increasing accessibility and employer involvement. While recent initiatives have

20 Stéphane Claquin and Danish Kamal Faruqui, "Apprenticeship in France," L.E.K., March 23, 2023, https://www.lek.com/insights/edu/eu/ei/apprenticeship-france.

21 Coquet, "Apprentissage: un bilan des années folles."

22 Coquet, "Apprentissage: un bilan des années folles."

23 "Design and Implementation of the Australian Apprenticeships Incentive System." 2024. Australian National Audit Office. https://www.anao.gov.au/sites/default/files/2024-03/Auditor-General_Report_2023-24_20.pdf.

24 National Centre for Vocational Education Research. 2003. "Government Funding of VET 2023." January 1, 2003. https://ncver.edu.au/research-and-statistics/publications/all-publications/government-funding-of-vet-2023.

shown promise, ongoing challenges highlight the need for continued refinement and support.

KEY TAKEAWAYS FROM INTERNATIONAL APPROACHES

We take the following key features of these international models as informative to a U.S. approach to scaling apprenticeship:

Funding is tied to achievement of milestones: Funding formulas are determined by the number of active apprentices under contract with employers. This is in contrast with the U.S. grantmaking approach where grants for system infrastructure are based on *potential* apprentices.

Funding for apprenticeship is simple: Formulas set amounts for each apprentice hired; these amounts may vary by the length of training and the occupation of the apprentice, as well as adjustments for completion or apprentice demographics, but are spelled out and transparent to all would-be recipients. This approach provides predictable funding: Organizations planning to scale up their programs know what income they will receive to cover costs.

Funding for apprenticeship is sustained. All three models cited above have multiyear guarantees on the funding available for apprenticeships. Apprenticeships can last between one and six years: The U.S. approach of short-term grants requires organizations to take risks on how they will fund programs over the long term.

The scale of funding provided for apprenticeships internationally meets the scale of the challenge: Multiple billions are allocated year on year, compared to the paltry level of U.S. investment.

PROMISING STATE PRACTICES

In the U.S., the funding system for apprenticeship is a patchwork of federal, state, public, private, and occasional philanthropic funds. Much of this funding is time limited, competitive, or tied to particular inputs. Figure 3, however, shows some examples of state-level pay-for-apprenticeship policies that are more in line with international models in countries that have successfully scaled apprenticeships.

The California model is particularly noteworthy. The state has an ambitious target for scale: Governor Gavin Newsom has committed to establishing 500,000 apprentices by 2029. To help reach this target, in 2022 California introduced the Apprenticeship Innovation Fund (AIF). The AIF was established to create an ongoing, predictable, and sustainable funding model for apprenticeship intermediaries. It is a

formula-based fund where eligible applicants receive funding based on their numbers of apprentices.

From an initial allocation of $135 million over three years, $17 million was awarded in 2022, funding over 6,000 apprentices and over 200,000 hours of related instruction. For apprentices in 2023, $22 million was awarded, covering 8,270 apprentices and 242,000 hours of related instruction. Early signs are that the AIF has had a positive impact: nontrades apprentices grew from 18,809 in 2022 to 21,590 in 2023, a 15% increase; overall apprentice starts grew 9% in the same period; and California has seen an average annual growth of 11% from 2014 to 2023.[25]

The AIF has supported programs in diverse sectors. For example, Early Care & Education Pathways to Success (ECEPTS), a project of Tides Center, is an industry intermediary and sponsor of registered apprenticeships (RA) for occupations within the early care and education industry. With over 500 registered apprentices, ECEPTS has been recognized as one of the fastest-growing sponsors of apprenticeship programs in California. They have used their AIF funding to support program sustainability. Partners have used this funding for a variety of purposes, including paying for mentors, success coordinators, and other supportive services for participants.

PROPOSAL FOR A NATIONAL PAY FOR SUCCESS APPRENTICESHIP SYSTEM

Scaling apprenticeships in the U.S. is no longer a controversial goal. Few have a quarrel with widening routes to rewarding careers by emphasizing learning by doing, earning while learning, and attaining high skills while contributing to production. But the key question is, how can the U.S. generate enough apprenticeships to reach everyone who qualifies and chooses to pursue this path to careers? And who will cover these costs?

Fortunately, several mechanisms are readily available for funding many of the costs of apprenticeship. Employers have generally shown a readiness to cover the wage costs of apprentices. To be sure, wage incentives may at times encourage employers to hire from particular populations or sustain wages during periods of economic stress. But existing state and federal funding mechanisms are available for supporting these objectives. Apprenticeship programs are also generally able to tap existing funding streams in support of the classroom training components of apprenticeship using community colleges, higher education finance, or workforce development funding.

25 State of California Department of Industrial Relations, "Apprenticeship Innovation Funding (AIF)," November 2024, https://www.dir.ca.gov/DAS/Grants/Apprenticeship-Innovation-Funding.html.

This leaves the marginal costs of creating and operating apprenticeship programs, which we assess to be the most significant limiting factor to apprenticeship growth.

The lessons of other countries suggest that a formula-based, pay-for-performance funding mechanism acts as a critical gap funder for apprenticeship and can give rise to the necessary ecosystem of enabling institutions and intermediaries that will stimulate apprenticeships at scale. These organizations not only persuade employers to try apprenticeship but also help employers to organize and register their programs.

We propose a funding model to mobilize an array of intermediaries and group sponsors to scale apprenticeships. A sound design and implementation plan for the strategy are critical. We suggest the following:

1. A Pay for Apprenticeship plan that provides apprenticeship intermediaries or employer sponsors with $3,000 for each registered apprentice they place with employers. Upon the completion of the apprenticeship, intermediaries or sponsors would qualify for an additional $1,000, yielding a maximum of $4,000 per new registered apprentice. For apprenticeship programs operating for more than a year, the amount per apprentice per year would be $2,000 per apprentice plus $1,000 for completion.

2. To reduce the deadweight costs of paying for apprenticeship activity already underway, construction trades apprenticeships would be excluded from this funding program, as would existing nongroup apprenticeship programs (those sponsored by a single employer).

3. Intermediaries eligible for the incentives would include group sponsors of apprenticeships, staffing companies, business services companies, other nonprofits and for-profit organizations, schools, workforce boards, and other state and local agencies. A set of "good standing" criteria would ensure that prospective payees affiliated with apprenticeship efforts with poor completion rates or other performance issues would be excluded from payment.

4. The intermediaries and sponsors would document the employment and completion of the apprentice through the existing public Registered Apprenticeship Partners Information Database System (RAPIDS). To ensure quality, only apprenticeships operating through the registered apprenticeship system would qualify.

5. To avoid swamping governmental overhead costs, we encourage the Department of Labor to consider contracting on a competitive

basis with an organization that has a core capacity in efficient payment processing. This approach would safeguard rigorous and efficient program operations, ensuring payments only go to fund registered apprenticeships and undertaking appropriate auditing of intermediaries.

The experience of California's AIF suggests such a program would start with modest use but would grow over time. We estimate that an initial outlay of $2.4 billion per year would increase the number of new apprenticeships in the U.S. over 10 years to 2 million per year — an eightfold increase. This increased takeup of apprenticeships can be compared with the status quo projection: Today's very low annual apprenticeship starts would only double over that same period.

We estimate that such a boost in the number of new apprentices would generate a positive societal return on investment in the range of $5 billion to $7 billion, assuming similar characteristics (length, completion rates) as in England. Broader system costs — for example, the costs of administration and classroom training — could amount to an additional $4 billion, although we would expect many of these costs to be substitutions from other spending on workforce development and higher education.[26]

Comparing the costs and benefits of this proposal versus the counterfactual of the current apprenticeship system, our modeling suggests that the return on investment for a Pay for Apprenticeship model would be around 1.68; that is, for every dollar invested in a Pay for Apprenticeship model, the social return would be $1.68.

Based on the estimated net positive economic benefits from the hiring of an incremental number of apprentices in the U.S., the proposed pay-for-apprenticeship funding amounts are commensurate with the value of these outcomes. This societal return on investment justifies federal outlays for outcomes-based financial incentives to spur additional apprenticeship starts and completions.

This outline is not intended to cover all the details of such a funding proposal. For example, we think such a payment structure should act as a platform that can be extended for particular policy purposes. Federal and/or state governments may wish to add incentives for economic development, industrial policy, or equity objectives.

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26 We calculate the societal benefits as the wage increases of these new apprentices versus a counterfactual of apprentice growth continuing its current trajectory and roughly doubling in 10 years' time. The increase in apprentice wages from the additional apprentices stimulated by a Pay for Apprenticeship model would amount to $28.7 billion in aggregate compared against this counterfactual. This assumes that apprentices who complete an apprenticeship would receive an average salary of $80,000 — roughly $33,000 higher than the current average noncollege salary. In reality, returns are likely to be higher; other researchers have estimated that if apprentices were to expand to emerging, nontraditional occupations, apprentice salaries could be 20% higher than the current average.

In designing some pay-for-apprenticeship regimes, policymakers may wish to privilege certain institutions as required partners or institutional types. While we understand this impulse to build out the ecosystem of apprenticeship in focused ways, we prefer the power of market forces to identify those actors that can be most effective with the resources available. However, as with other policy objectives, we see opportunities to flex this platform with added incentives that might benefit various key institutions.

Finally, we recognize that many practical operational questions remain to be addressed in implementing such a proposal. RAPIDS, for example, was not built for this purpose and will need to be updated. Our aim here is not to write the regulations for such a funding program but to provide a strategic framework that can be further developed.

CONCLUSION

Apprenticeship holds great promise for U.S. workers and businesses and has been constrained by underinvestment. As a consensus emerges to expand apprenticeship, now is the time to think through a funding system that goes beyond the current public support approaches. We need a funding mechanism that can drive the scaling of apprenticeship to levels seen by other countries. We need a system that provides greater parity between college degree pathways and apprenticeship. And we need a system that advances an impactful and diverse ecosystem of organizations developing, operating, and growing apprenticeship opportunities.

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